

ABSTRAK

PRARANCANGAN PABRIK BIOETANOL DARI MOLASE
BERKAPASITAS 30.000 TON/TAHUN
(Tugas Khusus Prarancangan Menara Distilasi (DC-301))

Oleh:

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Bioetanol merupakan produk yang memiliki banyak kegunaan antara lain bahan baku pembuatan senyawa kimia lain, antiseptik, bahan bakar kendaraan bermotor, dan sebagainya. Kebutuhan dalam negeri akan bioetanol meningkat seiring waktu sehingga dibutuhkan pabrik yang mampu memenuhi kebutuhan dalam negeri dan sisanya dapat diekspor untuk meningkatkan devisa negara.

Pabrik Bioetanol ini direncanakan didirikan di Bandar Mataram, Lampung Tengah, Provinsi Lampung dengan kapasitas 30.000 ton/tahun. Bahan baku yang digunakan adalah molase sebanyak 15.542,74 kg/jam. Pabrik beroperasi 24 jam/hari, 330 hari/tahun. Kebutuhan utilitas diantaranya adalah unit penyediaan air dan *steam*, unit penyediaan listrik, unit penyediaan bahan bakar, dan unit penyediaan udara tekan.

Bentuk perusahaan adalah Perseroan Terbatas yang berstruktur organisasi *line and staff* dengan kebutuhan karyawan 178 orang. Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 320.354.364.471
<i>Working Capital Investment</i>	(WCI)	= Rp 56.533.123.142
<i>Total Capital Investment</i>	(TCI)	= Rp 376.887.487.613
<i>Break Even Point</i>	(BEP)	= 42,83%
<i>Shut Down Point</i>	(SDP)	= 21,32%
<i>Pay Out Time after taxes</i>	(POT) _a	= 2,94 tahun
<i>Return on Investment after taxes</i>	(ROI) _a	= 20,41%
<i>Discounted cash flow</i>	(DCF)	= 28,89%

Hasil studi kelayakan teknik dan ekonomi menyatakan bahwa pendirian Pabrik Bioetanol layak dikaji lebih lanjut karena menguntungkan dan mempunyai masa depan yang baik.

Kata Kunci : Bioetanol, Molase, Fermentasi

ABSTRACT

FEASIBILITY STUDY BIOETHANOL PLANT FROM MOLASSES CAPACITY 30.000 TON/YEAR (Designing Distillation Column (DC-301))

By:

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Bioethanol is a product that has many uses such as raw materials for other chemical substances, antiseptic, biofuel and so forth. Domestic demand for bioethanol increases that the plant is needed to meet domestic demand and can be reliable to increase the country's foreign exchange.

The Bioethanol Plant is planned to be established in Bandar Mataram, Central Lampung, Lampung Province with a capacity of 30,000 tons/year. The raw material used is molasses as much as 15.542,74 kg/hour. The supplies of plant's utility are: water treatment, steam, power generation, electricity, fuel, and pressed air supply system.

The company entity form is Limited Liability Company (PT) with line and staff organization structure. Total labors are 178 people. Plant's economic studies are:

Fixed Capital Investment	(FCI)	=	Rp 320.354.364.471
Working Capital Investment	(WCI)	=	Rp 55.276.404.873
Total Capital Investment	(TCI)	=	Rp 56.533.123.142
Break Even Point	(BEP)	=	42,83%
Shut Down Point	(SDP)	=	21,32%
Pay Out Time after taxes	(POT) _a	=	2,94 years
Return on Investment after taxes	(ROI) _a	=	20,41%
Discounted Cash Flow	(DCF)	=	28,89%

The result of technical and economic feasibility study is feasible and need further analysis, because the plant is profitable with good sustainability.

Key Word : Bioethanol, Molasses, Fermentation